Amendment to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims:

Claims 1-111 (Cancelled).

112. (Currently Amended) A method for recording content distribution information in an adjunct to content, comprising: performing a functional transformation on an adjunct to content each time an authorized copy of the content is generated in a succession of copies of the content so that the adjunct is modified to include copier related information for the generation of each such authorized copy, wherein the functional transformation is characterized by an inverse transformation from which the copier related information for each such authorized copy is retrievable from the modified adjunct and the adjunct is smaller than a concatenation of the copier related information for the succession of copies of the content.~~, and the size of the adjunct to the content is substantially unchanged through the successive modifications of the adjunct to the content.~~

113. (Cancelled).

114. (Previously Presented) The method according to claim 112, wherein the modified adjunct is provided with the copy of the content.

115. (Previously Presented) The method according to claim 112, wherein the functional transformation is an exclusive-OR function.

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116. (Previously Presented) The method according to claim 112, wherein the adjunct is a watermark embedded in the content.

117. (Previously Presented) The method according to claim 112, wherein the adjunct is meta data associated with the content.

118. (Previously Presented) The method according to claim 112, wherein the adjunct is a signature related to the content.

119. (Previously Presented) The method according to claim 118, wherein the signature is a message digest or a hash value calculated using the content.

120. (Previously Presented) The method according to claim 112, wherein the content is copyrightable material.

121. (Previously Presented) The method according to claim 112, wherein the copier related information includes information of a user identification associated with a user of a copier used for generation of an authorized copy of the content.

122. (Previously Presented) The method according to claim 112, wherein the copier related information includes information of an IP address associated with a copier used for generation of an authorized copy of the content.

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123. (Previously Presented) The method according to claim 112, wherein the copier related information includes information of a copy device used for generation of an authorized copy of the content.

124. (Currently Amended) An apparatus for recording content distribution information in an adjunct to content, comprises a copier configured to: perform a functional transformation on an adjunct to content each time an authorized copy of the content is generated in a succession of copies of the content so that the adjunct is modified to include copier related information for the generation of each such authorized copy, wherein the functional transformation is characterized by an inverse transformation from which the copier related information for each such authorized copy is retrievable from the modified adjunct and the adjunct is smaller than a concatenation of the copier related information for the succession of copies of the content.~~, and the size of the adjunct to the content is substantially unchanged through the successive modifications of the adjunct to the content.~~

125. (Previously Presented) A method for extracting content distribution information from a copy of content, comprising: sequentially performing an inverse transformation on and extracting content distribution information from an adjunct to a copy of content until information of an original copy of the content is detected, wherein the adjunct contains copier related information provided using a functional transformation corresponding to the inverse transformation for a succession of copies of the content leading up to the copy upon which the inverse transformation is being performed.

126. (Previously Presented) The method according to claim 125, wherein the functional transformation was used to modify the adjunct with copier related information upon each successive generation of an authorized copy of the content originating from the original copy of the content.

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127. (Previously Presented) The method according to claim 125, wherein the inverse transformation is an exclusive-OR function.

128. (Previously Presented) The method according to claim 127, wherein the functional transformation is an exclusive-OR function.

129. (Previously Presented) The method according to claim 125, wherein the adjunct is a watermark embedded in the content.

130. (Previously Presented) The method according to claim 125, wherein the adjunct is meta data associated with the content.

131. (Previously Presented) The method according to claim 125, wherein the adjunct is a signature related to the content.

132. (Previously Presented) The method according to claim 125, wherein the content is copyrightable material.

133. (Previously Presented) The method according to claim 125, wherein the copier related information includes information of a user identification associated with a user of a copier.

134. (Previously Presented) The method according to claim 125, wherein the copier related information includes information of an IP address associated a copier.

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135. (Previously Presented) The method according to claim 125, wherein the copier related information includes information of a copy device used in generating a copy of the content by a copier.

136. (Previously Presented) An apparatus for extracting content distribution information from a copy of content, comprising a device configured to sequentially perform an inverse transformation on and extract content distribution information from an adjunct to a copy of content until information of an original copy of the content is detected, wherein the adjunct contains copier related information provided using a functional transformation corresponding to the inverse transformation for a succession of copies of the content leading up to the copy upon which the inverse transformation is being performed.

137. (Previously Presented) A method for recording content distribution information in an adjunct to content, comprising: performing a functional transformation on an adjunct to content in a packet of data when the packet of data is relayed by a network node so that the adjunct is modified to include identifying information of the network node, wherein the functional transformation is characterized by an inverse transformation which may be used to subsequently retrieve the identifying information from the adjunct.

138. (Previously Presented) The method according to claim 137, wherein the adjunct is further modified to include information indicating an approximate time when the functional transformation is being performed.

139. (Previously Presented) The method according to claim 137, wherein each network node relaying the packet of data through a network to a final destination performs the functional transformation on the adjunct to content in the packet

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of data so that the adjunct is modified to include identifying information of all such network nodes by the time it reaches the final destination.

140. (Previously Presented) The method according to claim 137, wherein the adjunct is a watermark embedded in the content.

141. (Previously Presented) The method according to claim 137, wherein the adjunct is meta data associated with the content.

142. (Previously Presented) The method according to claim 137, wherein the adjunct is a signature related to the content.

143. (Previously Presented) A method for extracting content distribution information from a packet of data, comprising: sequentially performing an inverse transformation on and extracting content distribution information from an adjunct to content in the packet of data until information of a source of the packet of data is detected, wherein the content distribution information has been included in the adjunct using a functional transformation corresponding to the inverse transformation.

144. (Previously Presented) The method according to claim 143, wherein the functional transformation has been used to modify the adjunct with network node identifying information upon each relay of the packet of data from the source to a final destination.

145. (Previously Presented) The method according to claim 144, wherein the inverse transformation is an exclusive-OR function.

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146. (Previously Presented) The method according to claim 144, wherein the functional transformation is an exclusive-OR function.

147. (Previously Presented) The method according to claim 143, wherein the adjunct is a watermark embedded in the content.

148. (Previously Presented) The method according to claim 143, wherein the adjunct is meta data associated with the content.

149. (Previously Presented) The method according to claim 143, wherein the adjunct is a signature related to the content.

150. (Previously Presented) The method according to claim 143, wherein the content distribution information includes information of an approximate time for each relay of the packet of data from an initial time that the packet left a source node to a current time associated with the extracting of content distribution information from the adjunct to content in the packet of data.

151. (Previously Presented) The method according to claim 150, wherein the approximate time includes information of a time zone associated with the approximate time.

152. (Previously Presented) The method according to claim 143, wherein an adjunct to content in a packet of data received at the final destination includes network node identifying information for all network nodes in a network through which the packet of data was relayed from the source to the final destination.

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153. (Previously Presented) The method according to claim 152, wherein the network node identifying information for each network node includes an IP address for the network node.

154. (Previously Presented) The method according to claim 143, wherein the method is performed by a BOT on the network.

155. (Previously Presented) The method according to claim 154, wherein the method is performed by the BOT on each packet of data encountered by the BOT while scouring the network so that the content distribution information determined thereby is useful for determining a network topology for the network.

156. (Previously Presented) The method according to claim 155, wherein the content distribution information determined by the BOT scouring the network is also useful for determining supernodes in the network.

157. (Previously Presented) An apparatus for extracting content distribution information from a packet of data, comprising an extraction computer configured to sequentially perform an inverse transformation on and extract content distribution information from an adjunct to content in the packet of data until information of a source of the packet of data is detected, wherein the content distribution information has been included in the adjunct using a functional transformation corresponding to the inverse transformation.

158. (Previously Presented) The apparatus according to claim 157, wherein the inverse transformation is an exclusive-OR function.

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159. (Previously Presented) The apparatus according to claim 158, wherein the functional transformation is an exclusive-OR function.

160. (Previously Presented) The apparatus according to claim 157, wherein an adjunct to content in a packet of data received at the final destination includes network node identifying information for all network nodes in a network through which the packet of data was relayed from the source to the final destination.

161. (Previously Presented) The apparatus according to claim 157, wherein the extraction computer is configured to perform as a BOT on the network.

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